

JUL 19 2019



100 GROVE ST. | WORCESTER, MA 01605

July 19, 2019

PLANNING BOARD
GRAFTON, MA

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**Subject: 155 George Hill Road Solar Facility
Special Permit, Site Plan and Stormwater Management Regulations Review**

Dear Joe and Conservation Commissioners:

We received the following documents on July 15, 2019:

- Correspondence from Industria Engineering to Grafton Planning Board dated July 15, 2019 re: Response to Comments on Application for Special Permit/Site Plan Approval and Scenic Road Permit, 155 George Hill Road, Grafton, MA.
- Reduced-size plans entitled Definitive Site Plan "155 George Hill Road Solar Facility" dated April 24, 2019 and last revised July 15, 2019, prepared by Summit Engineering & Survey, Inc. for Industria Engineering, Inc. (20 sheets)
- Bound document entitled Stormwater Management Submittal for Industria Solar Panel Project, George Hill Rd. dated April 23, 2019 and revised June 15, 2019, prepared by Summit Engineering & Survey, Inc. for Industria Engineering, LLC.

Graves Engineering, Inc. (GEI) has been requested to review and comment on the plans' conformance with applicable "Grafton Zoning By-Law" amended through October 15, 2018; Massachusetts Department of Environmental Protection (MassDEP) Stormwater Handbook and standard engineering practices on behalf of the Planning Board. GEI has also been requested to review and comment on the documents' conformance with applicable Conservation Commission "Regulations Governing Stormwater Management" dated May 2013 on behalf of the Conservation Commission. As part of our initial review GEI visited the site on June 11, 2019.

This letter is a follow-up to our previous review letter dated June 13, 2019. For clarity, comments from our previous letter are *italicized* and our comments to the design engineer's responses are depicted in **bold**. Previous comment numbering has been maintained.

Our comments follow:

Zoning By-Law

1. *A north arrow needs to be provided on sheets 1, 4 and 12. (§1.3.3.d.8)*
Acknowledged. North arrows have been provided on the sheets listed above.
2. *The Board may wish to inquire about the applicant's intentions for employee parking during the construction phase of the project. George Hill Road is a narrow road; on-street parking*

could affect vehicular traffic, especially for larger vehicles such as emergency vehicles. No vehicle parking should occur along George Hill Road. (§1.3.3.1)

Acknowledged. The applicant replied that all parking will occur on-site. Locations for construction-phase parking are on Sheet 11.

Regulations Governing Stormwater Management

3. *The plans do not show the locations for construction-phase parking. (§7.B.2.f)*

Acknowledged. Locations for construction-phase parking are on Sheet 11.

4. *The plans don't address the storage of construction-phase waste materials. Of particular concern is the storage of waste packaging material and the potential for windblown trash. (§7.B.2.j)*

Acknowledged. The applicant responded that dumpsters for waste and cardboard will be present on site. On Sheet 17, Operations Note E states "The System's Manager shall inspect the site daily..."

5. *GEI recommends that the erosion control plans include intermediate erosion controls (e.g. straw wattles) at ±100' spacing on slopes greater than 10% and at ±200-foot spacing on slopes of 3-10%.*

Acknowledged. Rows of stump grindings for intermediate erosion control barriers were added to Sheets 12 through 14.

Hydrology & MassDEP Stormwater Management

6. *GEI reviewed the hydrology computations and found them to be in order.*

The revised hydrology computations are in order.

7. *The scale of the subcatchment map for Basins B & C is incorrect. Furthermore, time of concentration paths should be shown on the drainage maps.*

Acknowledged. The time of concentration paths have been added and the scales have been revised.

8. *Compliance with the MassDEP Stormwater Standards and Stormwater Handbook is reasonable.*

No further comment necessary.

General Engineering

9. *During my site visit, I observed what appeared to be a healthy 30 to 36" diameter Hickory tree in the middle of the staked driveway entrance. Consideration should be given to relocating the driveway entrance farther to the south where large-diameter trees are not present. Such a driveway relocation would also provide better separation between the driveway and the inlet of an existing corrugated metal culvert that crosses George Hill Road.*

Acknowledged. On Sheet 5, the driveway has been relocated and a note was added to protect the tree.

10. *Information such as the size and material of the proposed drainage pipes need to be provided. Invert elevations need to be provided for the culverts along the driveway.*

Acknowledged. The culvert information was added to Sheets 14 and 15.

11. *A turn-around area was not provided at the entrance gate to the solar array. A turn-around area should be provided outside of the fence that will allow emergency vehicles to reverse direction without having to enter the fenced area.*

Acknowledged. On Sheet 9, a turn-around has been provided outside the fenced off area.

12. *A project identification sign including owner and emergency contact information needs to be placed at or mounted on the entrance gate.*

Acknowledged. The design engineer stated that signs will be placed on the entrance gate. GEI understands that the owner and contact information will be determined prior to the signs being posted.

13. *If not already done, the Planning Board may wish to solicit comments from the Grafton Fire Department.*

No further comment necessary.

We trust this letter addresses your review requirements. Feel free to contact this office if you have any questions or comments.

Very truly yours,
Graves Engineering, Inc.



Jeffrey M. Walsh, P.E.
Principal

cc: Andrew Baum, P.E.; Summit Engineering & Survey, Inc.
Michael Lotti; Industria Engineering, Inc.